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DIVISION OF OIL, GAS AND MINING

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August 4, 2003

CERTIFIED RETURN RECEIPT
7099 3400 0016 8896 3700

Mr. David Taylor
Miracle Rock Mining and Research
400 South 200 East
P. O. Box 76
Emery, Utah 84522

Re: Initial Review of Notice of Intention to Commence Large Mining Operations, Miracle Rock Mining and Research, The Rockland Mine, M/015/040, Emery County, Utah

Dear Mr. Taylor:

The Division has completed a review of your draft Notice of Intention to Commence Large Mining Operations for The Rockland Mine, located in Emery County, Utah. The Division received the initial submittal on June 13, 2003, and this was supplemented with a signature page and permit fees on June 20, 2003. After reviewing the information, the Division has the following comments which will need to be addressed before tentative approval may be granted.

The comments are listed below under the applicable Minerals Rule heading. Please format your response in a similar fashion. **Please address only the items requested in this review response, or you may send replacement pages for the original notice using redline and strikeout, so we can see what changes have been made. After the notice is accepted and ready for final approval, we will then ask that you send us two copies of the complete and corrected plan. Upon finalization of the permit, we will return one copy stamped "approved" for your records.** Please provide a response to this review by September 12, 2003.

The Division will suspend further review of the permit application until your response to this letter is received. If you have any questions in this regard please contact me, Paul Baker or Doug Jensen of the Minerals Staff. If you wish to arrange a meeting to sit down and discuss this review, please contact us at your earliest convenience. Thank you for your cooperation in completing this permitting action.

Sincerely,

D. Wayne Hedberg
Permit Supervisor
Minerals Regulatory Program

jb
Attachment: Review
cc: John Blake, SITLA
O:\M015-Emery\M0150040-MiracleRock\Final\rev-08042003miracle.doc

Utah!
Where ideas connect

REVIEW OF NOTICE OF INTENTION TO COMMENCE LARGE MINING OPERATIONS

Miracle Rock Mining and Research
The Rockland Mine

M/015/040
August 4, 2003

R647-4-104 – Operator's, Surface and Mineral Ownership

The application indicates that the operation is located in township 235 this should read 23S. (DJ)

R647-4-105 - Maps, Drawings & Photographs

105.3 Drawings or Cross Sections (slopes, roads, pads, etc.)

Please include a minimum of one north-south and one east-west cross-section through the mine area, showing the surface profile before mining, after mining, and following final reclamation. (DJ)

R647-4-106 - Operation Plan

106.3 Estimated acreages disturbed, reclaimed, annually.

The estimated acreage notes a .5-acre overburden/waste dump and a 1-acre ore stockpile. Please show the location of these features. The area indicated for topsoil storage does not encompass an acre as indicated. (DJ)

106.4 Nature of materials mined, waste and estimated tonnages

The plan estimates that ¼ acre/year of surface disturbance will take place. Estimated overburden tonnage from this area averaging a 5-foot depth would be 2117 cu yds and ore averaging a 10-foot depth will produce 4033 cu yds. Please review these figures and state if the estimates submitted in the plan are correct. (DJ)

106.5 Existing soil types, location, amount

The application indicates that soils in the area are Travessilla soils. These soils are described by the Natural Resources Conservation Service as being shallow, up to about four inches deep, and as having a fine sandy loam texture although the application indicates the texture is sand. The soil survey says this soil has no B horizon, and bedrock is at about 10-13 inches. (PBB)

Are there no other soil types that have been or will be disturbed? Please provide a map or other information from the soil survey showing where various soils are located within the mine area. If all the soils have a sandy loam or sand texture, it is very unlikely they have sodium or salt problems, but clayey soils in this area commonly have high electrical conductivity and sodium adsorption ratio values. If any of the soils that have been salvaged for reclamation are derived from shale parent material, they should be tested for these two parameters. It may be necessary to use these as backfill material rather than topsoil. (PBB)

The section of the application with the plan for protecting and redepositing soils seems to indicate only 0.4 inches of soil can be salvaged from one acre of the site (although there are

some questions about these figures as discussed in Section 106.6 below). If this is true, many of the overburden and waste materials may have to be used as substitute soils. In this case, the Division and the operator will need to know the nature of these other materials since they will need to be used as growth media. Anything that might be used as a substitute soil needs to be analyzed for electrical conductivity, sodium adsorption ratio, texture, and possibly acid/base potential. The reason for doing acid/base potential is that some of the humates or low grade coal can be acid forming. (PBB)

Please estimate the amount of soil that is in stockpiles at the present time. (DJ)

106.6 Plan for protecting & redepositing soils

Section 106.5 of the application indicates there are 403 cubic yards per acre (3 inches average) available to be salvaged, but Section 106.6 says 0.4 inches will be salvaged from one acre and that the total volume of soil to be stockpiled is 258 cubic yards. We calculate that 0.4 inches of soil salvaged from one acre yields 54 cubic yards. Please explain this discrepancy. Please also indicate how much soil has been or will be stockpiled. Is it 258 cubic yards, 54 cubic yards, or 403 cubic yards per acre (2821 cubic yards)? (PBB)

Assuming that the operator has already salvaged 258 cubic yards of soil, there would be a 0.26-inch soil depth to replace over the 7-acre site. If the actual amount of soil salvaged is only 54 cubic yards, there would only be about 0.054 inches of soil to put back. These quantities are not adequate to reclaim the entire site. Three inches of topsoil is marginal, but would probably be adequate without amendments, if there is enough rooting medium. According to the soil survey, the depth to bedrock is only 10-13 inches in native soils, and this much rooting medium is probably necessary to sustain vegetation. (PBB)

The operator needs to present a soils reclamation plan that will provide adequate rooting medium for vegetation to become reestablished. This needs to be based on the quantities and quality of soil and overburden available, which we do not know at this time. (PBB)

The location of the topsoil stockpile is shown on Map 105.2. The soil is stacked to prevent any drainage from washing away the materials. The stockpile should be seeded with an interim revegetation seed mix. We highly recommend that the operator place a sign on the soil pile so it is not accidentally lost or used as fill. (PBB)

106.7 Existing vegetation - species and amount

The application includes raw data from 20 vegetation cover quadrats. From this data, we have calculated the mean cover value as 23.78 percent which includes canopy cover. If one does not include canopy cover, the value becomes 2.78 percent. In the summary section, however, the application says vegetation cover is 10 percent. Please explain how this figure was derived and why the apparent discrepancy between the raw data and the compiled figure (10 percent). (PBB)

The revegetation success standard is 70 percent of the cover that existed before mining, but the application says it would be 12.6 percent. If the pre-disturbance cover value is 10

percent, the standard would be 70 percent of 10 percent or 7 percent. If the cover is, as it appears, 23.78 percent, the standard would be 16.65 percent. Please clarify what the standard is. (PBB)

R647-4-107 - Operation Practices

107.1 Public safety & welfare

107.1.14 Posting warning signs

Warning signs should be place at the entrance of the site informing the public of the operation and that blasting takes place at the site on an intermittent basis. (DJ)

R647-4-109 - Impact Assessment

109.2 Impacts to threatened & endangered wildlife/habitat

The application states that the mining operations will have no impact on wildlife and that there are no wetlands or migratory feeding in the area because of the lack of vegetation. Although the mine is not in critical wildlife habitat and the application does not need to be changed in this regard, any disturbance is going to have some effects on local wildlife. (PBB)

There are several threatened or endangered species in Emery county, and a few of the plants may have potential habitat in the mine area. The operator intends to do some highwall mining which involves disturbance of new areas. Therefore, these expansion areas should be checked for the species with potential habitat, including last chance Townsendia, San Rafael cactus, Winkler pincushion cactus, and the Wright fishhook cactus. This needs to be done in the spring, but for now, a commitment to check these expansion areas would be adequate. (PBB)

R647-4-110 - Reclamation Plan

110.2 Roads, highwalls, slopes, drainages, pits, etc., reclaimed

The plan says SITLA has requested that highwalls will be left intact if mineable materials are still intact. The Division will require bonding for the reclamation of these features. If reserves still exist and SITLA makes this request at the time of closure, a determination will be made whether to transfer responsibility for this reclamation and release the bond back to the operator. (DJ)

Using "shot off" material to reduce the highwall slope angle is acceptable; use of overburden material to reduce the highwall slopes is also encouraged. Bonding for shooting down these slopes will need to be included in the bond estimate. (DJ)

110.5 Revegetation planting program

The application discusses surface preparation for the roadways (rip 18 inches deep and put water bars where there are slopes) but not for the rest of the site. The reclamation plan

needs to show how compaction will be relieved and what other surface preparation techniques will be used. (PBB)

The plan should also include the method to be used to reclaim the side cast portions of the access road. (DJ)

The application says the refuse pile will be terraced, topsoiled, and seeded. The refuse pile should be graded back against a highwall. Please indicate how much topsoil and other soil material is available to place over the refuse. If there is less than about two feet of soil to be placed over this pile, please discuss whether the refuse is suitable as a subsoil. (PBB)

It will not be necessary to terrace the refuse pile if the pile is recontoured to a 3:1 slope and ripped on contour. (DJ)

The proposed seed mix has three species, Indian ricegrass, black sage, and shadscale. The way the seed mix is presented in the application is ambiguous. It says seed will be applied at the rate of 12-15 pounds per acre and gives percentages for the three species. What is the basis for these percentages? It could be bulk seed, pure live seed, or the number of pure live seeds. Please specify the weight of pure live seed per acre. This is a more standard unit. (PBB)

While these are all native species that should become established in this area, there are other species that should grow in a reclaimed mine site in this area. The Division suggests that the operator include Russian wild rye, fourwing saltbush, bluebunch wheatgrass, and Palmer penstemon in the mix. Russian wild rye in particular has done very well in some nearby test plots. A recommended seed mix is attached to this review. (PBB)

The application needs to describe how seed will be applied. (PBB)

R647-4-111 - Reclamation Practices

111.1 Public safety & welfare

1.14 Posting warning sign
See comments under R647-4-107.1.14

111.6 All slopes regraded to stable configuration

At closure, the Division encourages the operator to utilize a trackhoe to pull back portions of the slopes of the pad and waste dumps to aid in reducing the overall slope of these features. (DJ)

111.7 Highwalls stabilized at 45 degrees or less

See comments under R647-4-110.2

111.9 Dams & impoundments left self draining & stable
Reclamation details for the sediment pond should be included in the plan and in the reclamation surety cost estimate for the site. (DJ)

R647-4-112 – Variance

No variance is requested.

R647-4-113 – Surety

A surety estimate for this site cannot be calculated until all the requested information requested in this review is received. (DJ)

Recommended Seed Mix for the Rockland Mine
M/015/040

Species	Pounds Pure live seed/acre
Indian Ricegrass	3
Russian Wild rye	3
Bluebunch Wheatgrass	3
Palmer Penstemon	0.5
Fourwing Saltbush	3
Shadscale	2
Black Sage	0.25